

reconsideration and allowance of the pending application.

No new matter is added in the amendment to the specification and claims herein. The specification is amended to correct a typographical error with regard to reference number 344. Basis for the amendment to the specification may be found at least in Figure 11 and on page 9, line 14; and page 10, lines 14, 18, 21, and 25, as examples. Basis for the amendment to Claim 8 and new Claims 26 and 28 may be found in the specification at least on page 11, lines 12-21, as an example. Basis for new Claims 25 and 27 may be found in the specification at least on page 10, lines 15-18, as an example. While these particular references to the specification are provided as examples, the Applicants make no assertion that they comprise the only or the best examples of support.

Claims 8, 22 and 24 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Applicants' admitted prior art shown in Figure 2. In view of the amendment to independent Claim 8 and the following remarks, the Applicants respectfully traverse the Examiner's rejections.

The references of record do not teach, anticipate or suggest the claimed invention of Applicants' independent Claim 8, as amended herein. For example, prior art Figure 2 does not teach, anticipate or suggest, "a first conductive liner deposited over the conductive barrier layer, the first conductive liner comprising a molecular grain structure having a plurality of columns" and "a conductive layer deposited on the second conductive liner, the conductive layer comprising a molecular grain structure having a plurality of columns, wherein the columns of the conductive layer are not aligned with the columns of the first conductive liner," now recited in Applicants' Claim 8. Thus, it is respectfully submitted that the Applicants' independent Claim 8 is allowable

over the references of record.

Furthermore, it is respectfully submitted that Claims 9-13, 22, 24, and 27, which depend from independent Claim 8, are allowable by reason of dependence from an allowable claim as well as for adding further limitations, which narrow the scope of the particular independent claims and compel a broader interpretation of the base claims upon which they depend.

Claims 1-7, 9-13, 21 and 23 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants' admitted prior art of Figure 2, in view of Kotecki. The Applicants respectfully traverse the Examiner's rejection.

Kotecki *et al.* do not teach, anticipate or suggest a first conductive *liner*, as in the Applicants' independent Claim 1. The Examiner states that "Kotecki teaches a DRAM structure which includes a conductive barrier layer (TaSiN), a first conductive liner (Pt), a dielectric layer (BSTO) and a conductive layer (Pt) deposited over the dielectric layer." The Examiner is incorrect in stating that Kotecki *et al.* teach a first conductive *liner*. Kotecki *et al.*'s Pt layer is not a liner - it is an electrode of a capacitor. See Figure 3 and the description thereof on p. 369 of Kotecki *et al.* For example, Kotecki *et al.* teach a 250 nm thick electrode while Applicants' claimed invention (Claim 5), specifically recites a first conductive liner that is 20 to 50 nm thick. Furthermore, Kotecki *et al.* teach a capacitor having two Pt electrodes disposed on either side of an insulating material (BSTO, the capacitor dielectric); thus there is no motivation to combine Kotecki *et al.* with the multi-layer electrode of prior art Figure 2, as the Examiner suggests. Thus, it is respectfully submitted that the Applicants' independent Claim 1 is allowable over the references of record.

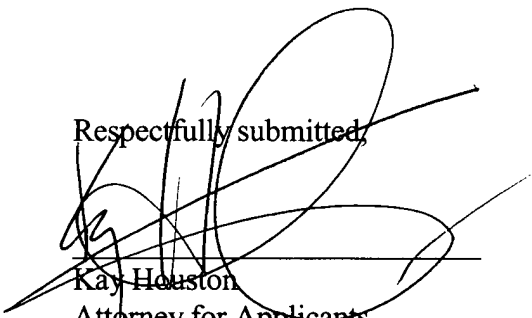
Furthermore, it is respectfully submitted that Claims 2-7, and new claims 25 and 26, which

depend from independent Claim 1, are allowable by reason of dependence from an allowable claim as well as for adding further limitations, which narrow the scope of the particular independent claims and compel a broader interpretation of the base claim upon which they depend.

In addition, it is respectfully submitted that newly added Claims 28-30 stand allowable over the references of record.

In conclusion, the Applicants respectfully request that the Examiner allow Claims 1-13 and 21-30, and pass the present patent application to issuance. If the Examiner should have any questions or feel that a discussion would advance the prosecution, the Applicants invite the Examiner to contact the Applicants' attorney at the telephone number listed below.

Respectfully submitted,

  
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**Appendix A**  
**Marked-up Version of Claims**

8. (Amended) A multi-layer electrode for an integrated circuit, comprising:

a conductive barrier layer;

a first conductive liner deposited over the conductive barrier layer, the first conductive liner comprising a molecular grain structure having a plurality of columns;

a second conductive liner deposited over the first conductive liner, the second conductive liner comprising a conductive oxide; and

a conductive layer deposited on the second conductive liner, the conductive layer comprising a molecular grain structure having a plurality of columns, wherein the columns of the conductive layer are not aligned with the columns of the first conductive liner.

25. (New) The multi-layer electrode according to Claim 1, wherein the second conductive liner comprises a thickness such that the second conductive liner is etchable by the same etchant gas used to etch the first conductive liner and the conductive layer.

26. (New) The multi-layer electrode according to Claim 1, wherein the conductive layer comprises a molecular grain structure having columns, the conductive layer including a top surface; wherein the first conductive liner comprises a molecular grain structure having columns; wherein the columns of the conductive layer are not aligned with the columns of the first conductive liner; and wherein the second conductive liner prevents diffusion of oxide from the conductive layer top surface through the conductive layer to the conductive barrier layer.

27. (New) The multi-layer electrode according to Claim 8, wherein the second conductive liner comprises a thickness such that the second conductive liner is etchable by the same etchant gas used to etch the first conductive liner and the conductive layer.

28. (New) An electrode for a semiconductor device, comprising:

a conductive barrier layer;

a platinum liner formed over the conductive barrier layer, the platinum liner comprising a molecular grain structure having a plurality of columns;

a conductive oxide formed over the platinum liner, the conductive oxide having a thickness of 20-50 Angstroms; and

a platinum layer formed over the conductive oxide, the platinum layer comprising a molecular grain structure having a plurality of columns, wherein the columns of the platinum layer are not aligned with the columns of the platinum liner.

29. (New) The multi-layer electrode according to Claim 28 wherein the second conductive liner comprises  $\text{IrO}_2$  or  $\text{RuO}_2$ .

30. (New) A multi-layer electrode for an integrated circuit, comprising:

a conductive barrier layer;

a first conductive liner deposited over the conductive barrier layer;

a second conductive liner deposited over the first conductive liner, the second conductive liner comprising a conductive oxide, the second conductive liner having a thickness of 20-50 Angstroms; and

a conductive layer deposited on the second conductive liner.



## Appendix B

### Marked-up Version of Specification

The paragraph beginning on page 10, line 6:

A layer of conductive material 344 [324] is deposited over the second conductive liner 342. Conductive layer 344 [324] preferably comprises Pt, and may alternatively comprise other conductive materials such as Ir, Ru, Pd or combinations thereof, for example. Preferably, conductive material 344 [324] comprises 1500-3500 Angstroms of Pt, and more preferably comprises 2200 Angstroms of Pt.

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